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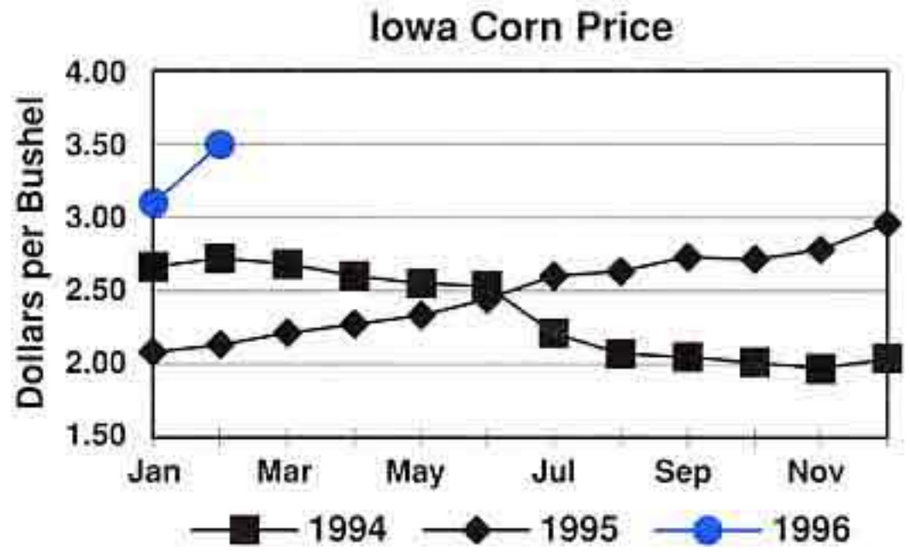

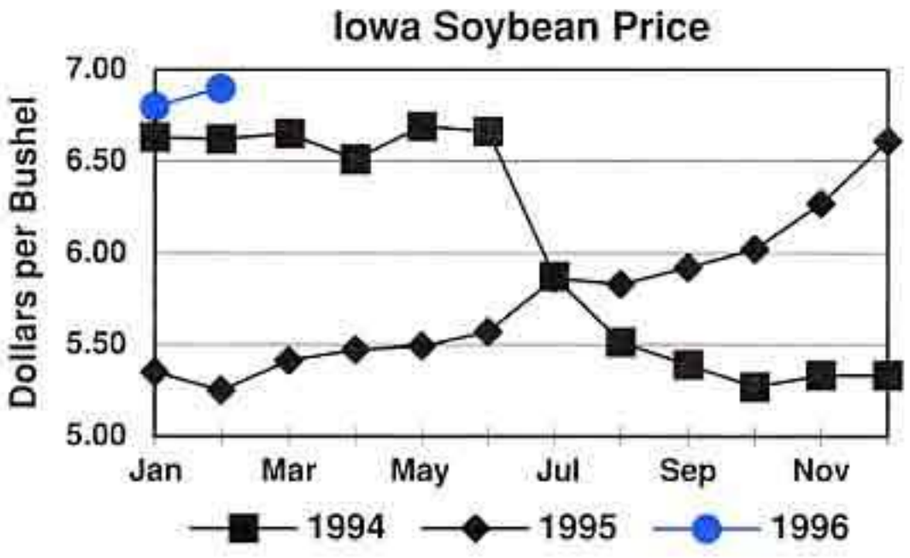

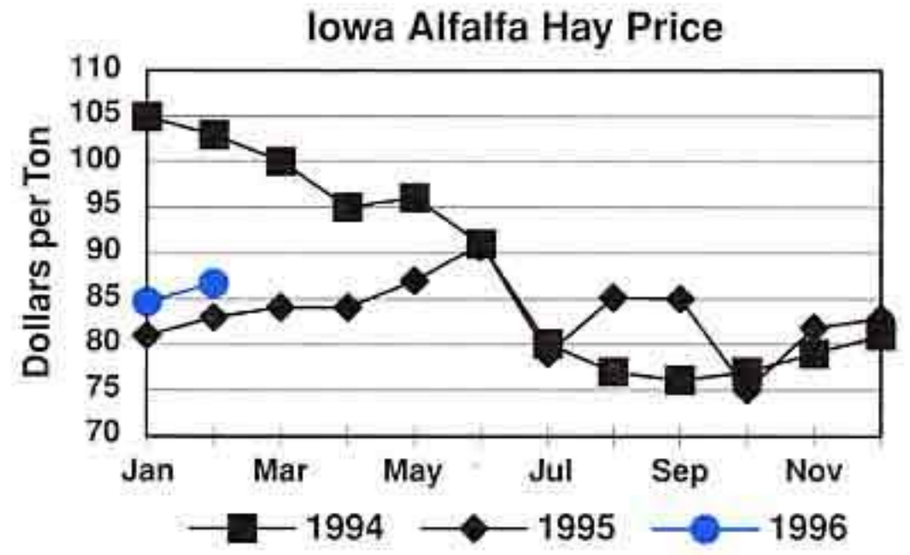

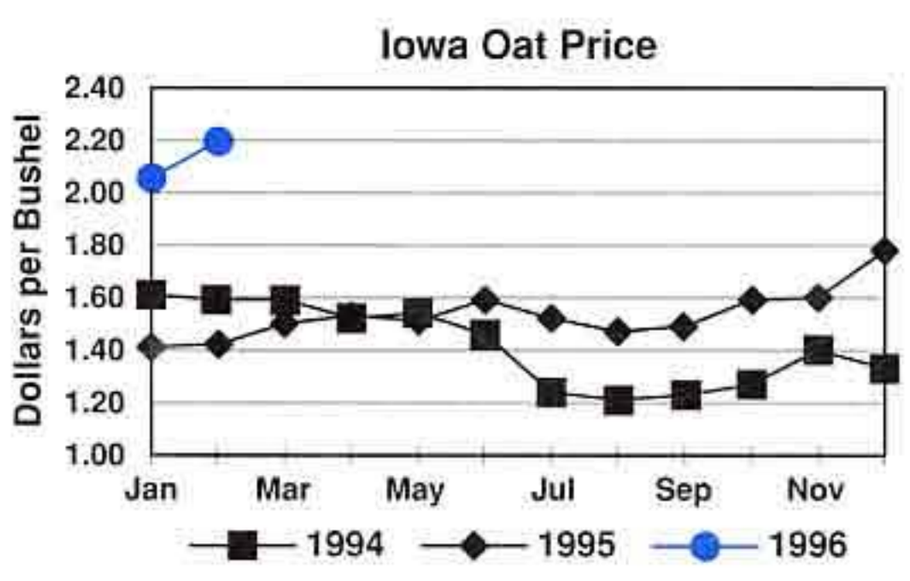

The Current Situation In Iowa

Stocks-to-Use Ratios and Grain Price Volatility

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Speculation in the agricultural community early this year focused not only on a new farm bill but also on the abnormal world grain market conditions. Much of the market speculation centered on the fact that we currently have high prices driven by strong demand and low supply. This has caused stockholdings of grain to be drawn down. An indicator of the stock situation relative to consumption can be found in the stocks-to-use ratio. This indicator is useful for evaluating grain price movements and potential movements. This article briefly explores the market relationships that underlie this ratio. It also serves as an introduction for a new addition to the indicator section of this publication.

The "stocks" in the ratio are the world ending stocks and the "use" is the total consumption for the particular commodity. The total stocks portion of the ratio is normally described in three parts; "free," farmer-owned reserve (FOR), and commodity credit corporation (CCC) stockholdings. For simplicity we combine FOR and CCC in what we call government stocks. Free stock accumulation occurs when individuals believe prices will rise later in the year (speculative demand) or if they need additional carryover for feeding animals or for processing (transactions demand).

Government stock accumulation has stemmed from a variety of programs. Historically, the primary policy objectives of these programs were price enhancement and stabilization (e.g. when prices are thought to be low, market supplies are reduced by accumulating government stocks). Over time, government stockholdings increased dramatically, especially for wheat and corn, leading to changes in government stock programs. Figure 1 shows the growth in corn stocks from 1976 to 1986 and the impacts of changes in stocks programs from 1986 onward.

In the 1985 Farm Bill, loan rates for program crops were drastically reduced and linked to a moving average of past prices. The purpose and effect of these changes was to remove the accumulation of Commodity Credit Corporation (CCC) stocks as a major mechanism for price enhancement and stabilization. The farm program changes in 1990 included a reduction in the use of the Farmer Owned Reserve (FOR)

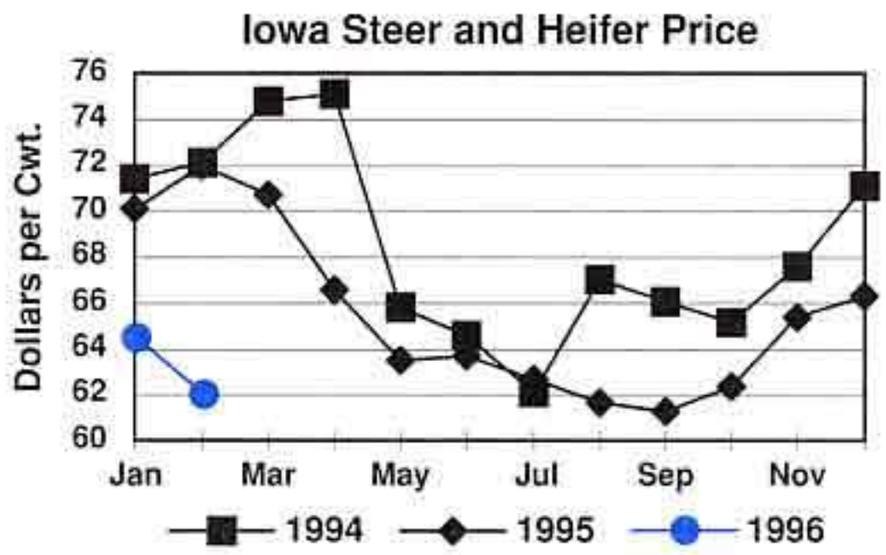
program for price stabilization and the expanded use of marketing loans to prevent forfeiture to the CCC of crops under loan. These policy reforms greatly expanded the dependence of the market on free stocks and diminished the role of government stocks.

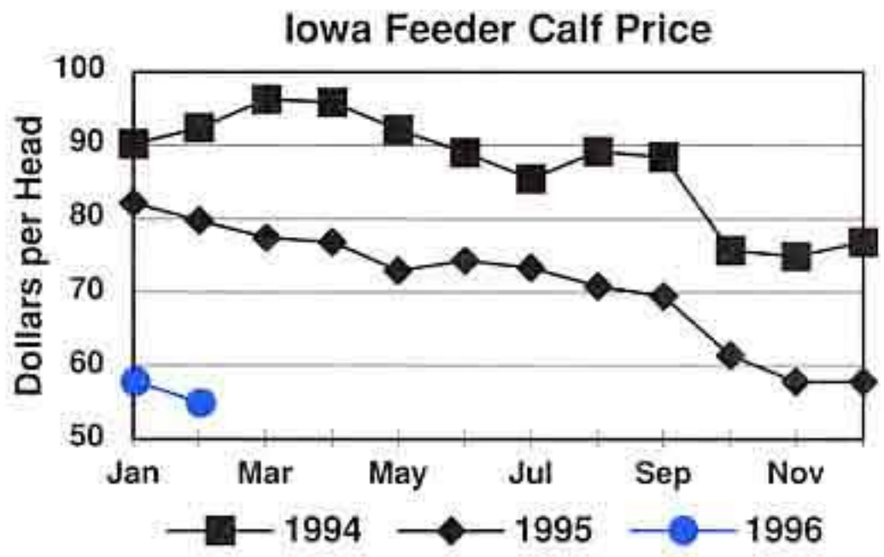
The degree of U.S. government involvement in the stockholdings process over time can be seen in the share of world ending stocks of corn (Figure 2). This involvement has declined in the 1990s with a significant effect on the world stockholding situation. Note that world carry-over stocks of corn, soybeans, and wheat are at their lowest levels in recent history, with the largest changes attributable to the United States (Figure 3). The season average corn price for this marketing year will likely be the third highest on record. Thus, simple observation indicates an inverse relationship between corn stocks-to-use ratios and market price especially over the 1990s.

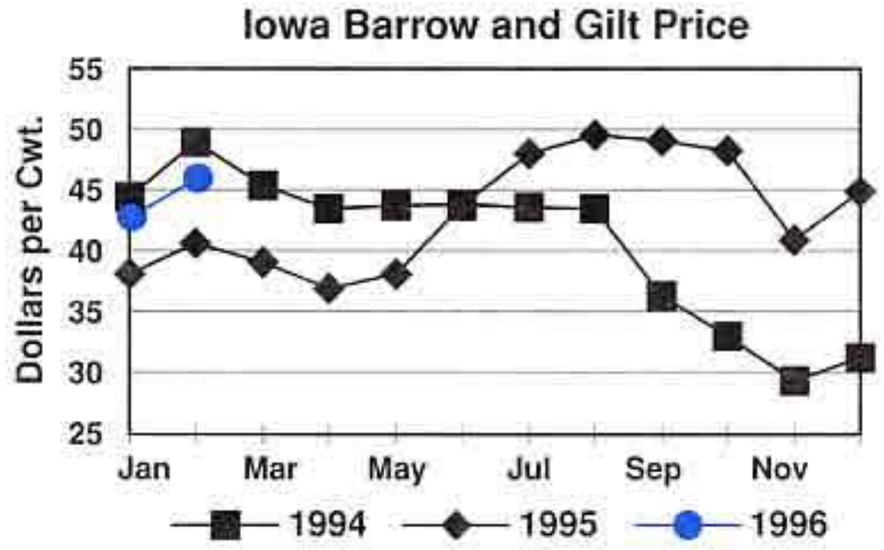
While it appears that when this ratio is low, market price tends to be high, this representation is too much of a simplification to provide insights about market fundamentals. For example, the primary consumptive uses of corn (livestock feed and industrial products) are somewhat inflexible to intra-year market price changes. In years when there are crop shortfalls and high prices, livestock producers and product makers cannot quickly or easily reduce their corn use. Exports may adjust more quickly, unless there is also a shortage in world markets as occurred for corn this year.

In these situations, consumption outpaces production and a drawdown in stockholdings occurs. Alternatively, in good crop years when it is thought to be more profitable—even with storage costs—to keep grain and wait for a higher price, free market stockholdings will accumulate.

Another aspect of prices and the stocks-to-use ratio deals with inter-year and intra-year price variability. High prices this year will induce an inter-year supply response that, in turn, may lead to increased production, stock accumulation, and lower prices. Some would argue that inter-year volatility is actually reduced with a increased market orientation because producers around the world would have greater production flexibility and could respond in a timely manner to market signals. While the direction of change is uncertain, it is clear that markets are more volatile when carry-over stocks are lower. Whatever else occurs, future price movements in these markets are very much dependent upon weather and realized







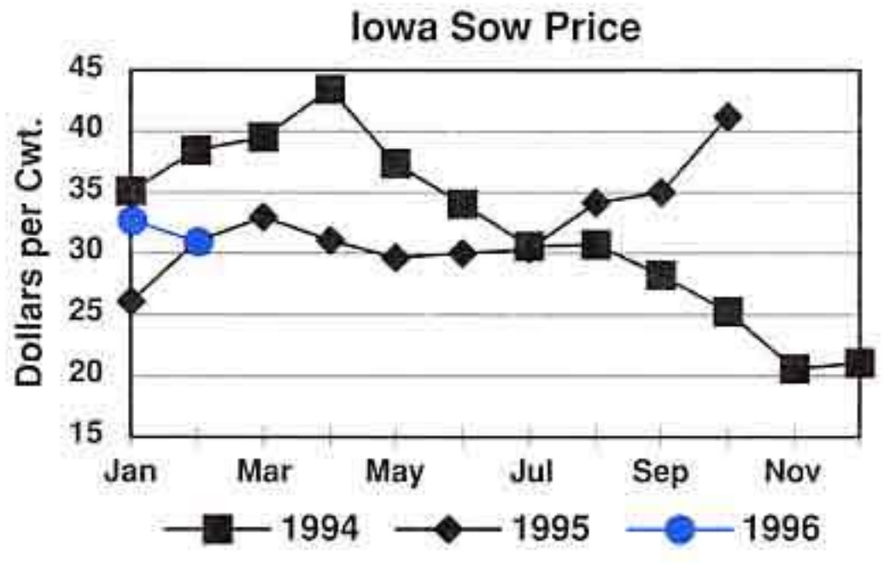


Figure 1: U.S. Ending Stocks of Corn and U.S. Price of Corn

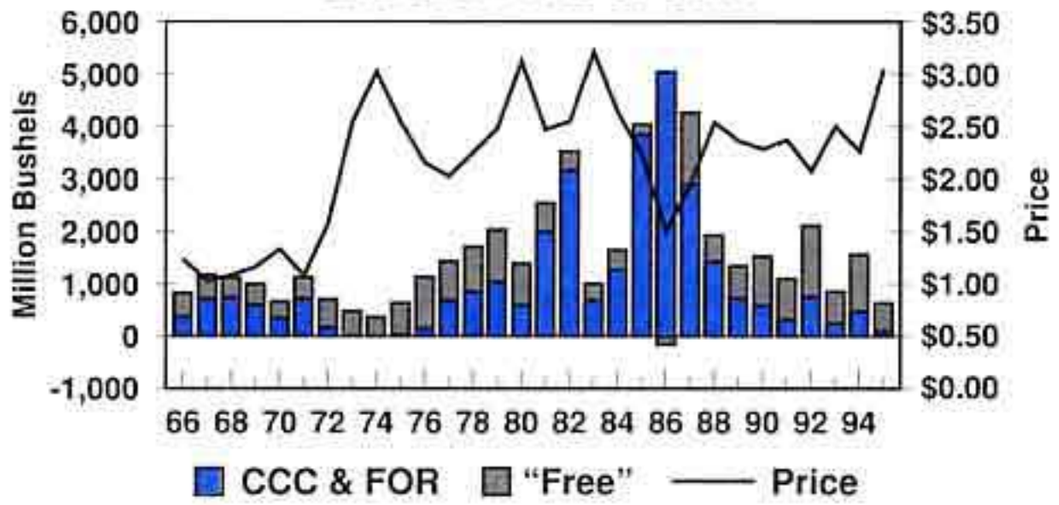


Figure 2: Ending Stocks of Corn, U.S. and Rest of the World

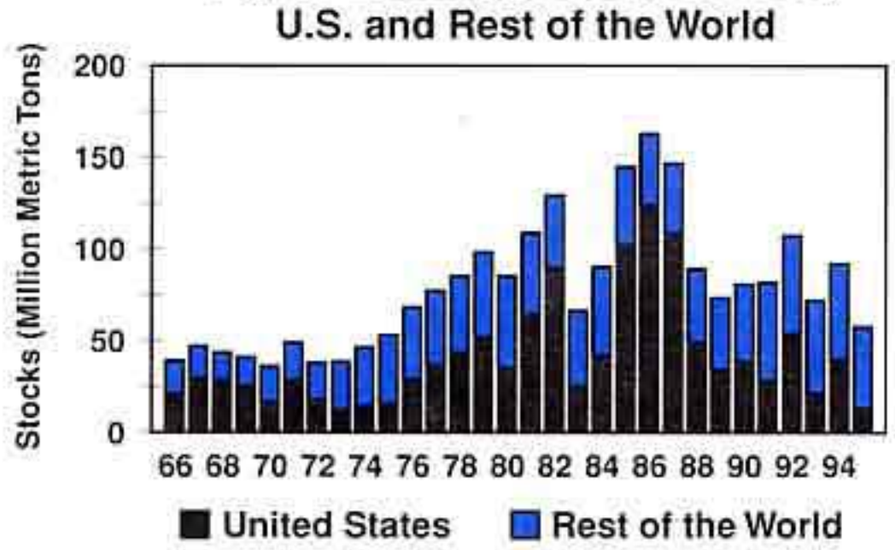
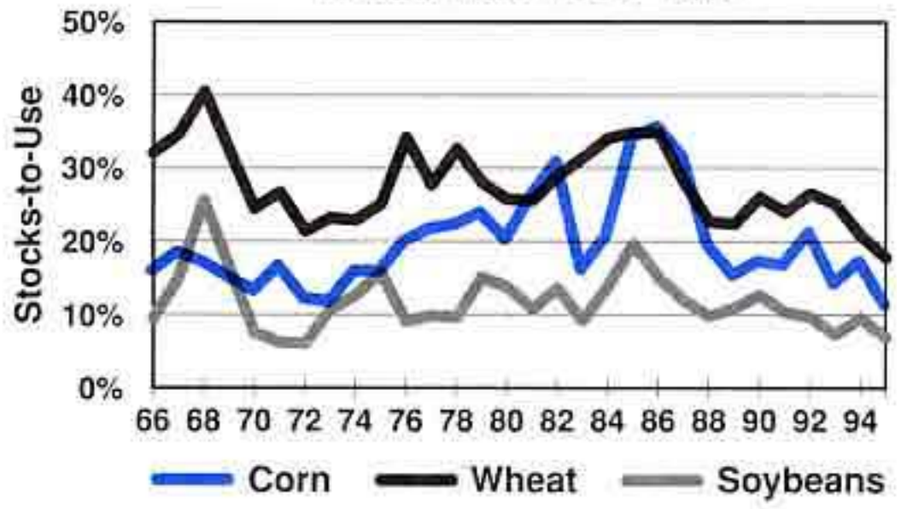


Figure 3: World Stocks-to-Use Ratios from 1966-1995



yields. Given the current historic lows in the stock-to-use ratio, prices will be very sensitive to weather developments throughout the growing season.

Because of the usefulness in monitoring changing market conditions, the *Iowa Ag Review* will include a world stocks-to-use table in the Agricultural Economic Indicators section that is published in each issue. The information comes from U.S. Department of Agriculture and provides the last two month's projections for the current crop year's stocks-to-use ratio. The table also provides the last crop year's stock-to-use ratio. We hope that this information will be of use to our readers.

Agricultural Economic Indicators

Iowa Cash Receipts

	1995	1994	1993
		(Million Dollars)	
Crop			
Jan - Nov Total	5,451	4,405	3,783
Livestock			
Jan - Nov Total	5,276	4,764	5,309

Average Farm Prices Received By Iowa Farmers

	Jan 1996	Dec 1995	Jan 1995
		($/Bushel)	
Corn	3.10	2.96	2.08
Soybeans	6.80	6.61	5.35
Oats	2.06	1.78	1.41
		($/Ton)	
Alfalfa	85.00	83.00	81.00
All Hay	83.00	81.00	78.00
		($/Cwt.)	
Steers & Heifers	64.50	66.30	70.10
Feeder Calves	57.90	58.00	82.10
Cows	30.20	31.60	39.10
Barrows & Gilts	42.90	44.60	38.20
Sows	32.70	32.80	26.00
Sheep	23.50	24.00	30.90
Lambs	73.00	73.70	63.70
		($/Lb.)	
Turkeys	0.41	0.40	0.37
		($/Dozen)	
Eggs	0.65	0.65	0.36
		($/Cwt.)	
All Milk	13.20	13.50	12.00

World Stocks-to-Use Ratios

	Crop Year		
	1995/96 February Projection	1995/96 January Projection	1994/95 February Estimate
		(Percent)	
Corn	10.5	10.8	17.1
Soybeans	14.4	14.7	19.9
Wheat	17.5	17.7	20.7